wireless channel baseband signal is carried in a second modulated format by a second carrier signal, said second carrier signal having a frequency within a frequency range that spans from 2.400 GHz to 2.480GHz, the difference between said first and second frequencies less than the difference between said second carrier signal frequency and 1.575 GHz, said phase lock output signal provided at an output of said phase lock loop;

b) a first signal path that flows from said phase lock loop output, wherein said first signal path propagates a first downconversion signal in order to receive said GPS baseband signal; and

c) a second signal path that flows from said phase lock loop output, wherein said second signal path propagates a second downconversion signal in order to receive said wireless channel baseband signal.

d)

11. (New) The apparatus of claim 10 wherein said first signal path passes through a frequency divider.

12. (New) The apparatus of claim 11 wherein said first carrier signal has a frequency within the L1 GPS frequency band.

13. (New) The apparatus of claim 12 wherein said frequency divider has a frequency division value of 2/3.

14. (New) The apparatus of claim 13 wherein said first frequency is 2.361 GHz during generation of said first downconversion signal.

15. (New) The apparatus of claim 11 wherein said frequency divider is a regenerative divider.

16. (New) The apparatus of claim 10 further comprising said wireless channel within a BLUETOOTH frequency hopping wireless network.

17. (New) The apparatus of claim 10 further comprising said wireless channel within an IEEE 802.11 frequency hopping wireless network.

18. (New) The apparatus of claim 10 further comprising said wireless channel within a HomeRF frequency hopping wireless network.

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19. (New) An apparatus, comprising:

a) a phase lock loop that provides an output signal that changes from having a first frequency in order to receive a GPS baseband signal to having a second frequency in order to receive or transmit a wireless channel baseband signal, wherein said GPS baseband signal is carried in a first modulated format by a first carrier signal, wherein said wireless channel baseband signal is carried in a second modulated format by a second carrier signal, said second carrier signal having a frequency within a frequency range that spans from 2.400 GHz to 2.480GHz, the difference between said first and second frequencies less than the difference between said second carrier signal frequency and 1.575 GHz, said phase lock loop output signal provided at an output of said phase lock loop;

b) an integrated frequency hopping/GPS receiver having a downconverter, said downconverter having an input;

c) a first signal path that flows from said phase lock loop output to said downconverter input, wherein said first signal path propagates a first downconversion signal in order to receive said GPS baseband signal; and

d) a second signal path that flows from said phase lock loop output to said downconverter input, wherein said second signal path propagates a second downconversion signal in order to receive said wireless channel baseband signal.

20. (New) The apparatus of claim 19 wherein said first signal path passes through a frequency divider.

21. (New) The apparatus of claim 20 wherein said first carrier signal has a frequency within the L1 GPS frequency band.

22. (New) The apparatus of claim 21 wherein said frequency divider has a frequency division value of 2/3.

23. (New) The apparatus of claim 22 wherein said first frequency is 2.361 GHz during generation of said first downconversion signal.

24. (New) The apparatus of claim 20 wherein said frequency divider is a regenerative divider.

25. (New) The apparatus of claim 19 further comprising said wireless channel within a BLUETOOTH frequency hopping wireless network.

26. (New) The apparatus of claim 19 further comprising said wireless channel within an IEEE 802.11 frequency hopping wireless network.

27. (New) The apparatus of claim 19 further comprising said wireless channel within a HomeRF frequency hopping wireless network.

28. (New) The apparatus of claim 19 wherein said integrated frequency hopping/GPS receiver and said phase lock loop are at least partially integrated on the same semiconductor chip.

29. (New) The apparatus of claim 10 wherein said first and second signal processing paths are alternatively selected by a frequency hopping/GPS control signal, to provide to said downconverter with either said first downconversion signal or said second downconversion signal.

30. (New) An apparatus, comprising:

a) a phase lock loop that provides an output signal that changes from having a first frequency in order to receive a GPS baseband signal to having a second frequency in order to receive or transmit a wireless channel baseband signal, wherein said GPS baseband signal is carried in a first modulated format by a first carrier signal, wherein said wireless channel baseband signal is carried in a second modulated format by a second carrier signal, said second carrier signal having a frequency within a frequency range that spans from 2.400 GHz to 2.480GHz, the difference between said first and second

frequencies less than the difference between said second carrier signal frequency and 1.575 GHz, said phase lock loop output signal provided at an output of said phase lock loop, said phase lock loop having a feedback divider, said feedback divider having an input that controls the division performed by said feedback divider, said feedback divider input coupled to an output of a sigma delta modulator;

b) a first signal path that flows from said phase lock loop output, wherein said first signal path propagates a first downconversion signal in order to receive said GPS baseband signal; and

c) a second signal path that flows from said phase lock loop output, wherein said second signal path propagates a second downconversion signal in order to receive said wireless channel baseband signal.

A1 Cont

31. (New) The apparatus of claim 30 wherein said first signal path passes through a frequency divider.

32. (New) The apparatus of claim 31 wherein said first carrier signal has a frequency within the L1 GPS frequency band.

33. (New) The apparatus of claim 32 wherein said frequency divider has a frequency division value of 2/3.

34. (New) The apparatus of claim 33 wherein said first frequency is 2.361 GHz during generation of said first downconversion signal.

35. (New) The apparatus of claim 31 wherein said frequency divider is a regenerative divider.

36. (New) The apparatus of claim 30 further comprising said wireless channel within a BLUETOOTH frequency hopping wireless network.

37. (New) The apparatus of claim 30 further comprising said wireless channel within an IEEE 802.11 frequency hopping wireless network.

38. (New) The apparatus of claim 30 further comprising said wireless channel within a HomeRF frequency hopping wireless network.

39. (New) The apparatus of claim 30 wherein said phase lock loop and said sigma delta modulator are at least partially integrated onto the same semiconductor chip.

40. (New) The apparatus of claim 39 wherein a downconverter within an integrated frequency hopping/GPS receiver is at least partially integrated onto said semiconductor chip with said sigma delta modulator and said phase lock loop.

41. (New) The apparatus of claim 30 wherein said sigma delta modulator has a control word input, the value of a control word presented upon said control word input determined by either a control word logic circuit or a GPS control word, wherein said control word logic circuit generates a control word for generating said second downconversion signal in response to an indication that a particular wireless channel is desired.

42. (New) The apparatus of claim 45 wherein said first signal path passes through a frequency divider having a frequency division value of 2/3, said GPS control word having a value such that said phase lock loop output signal used to generate said first downconversion signal has a frequency of 2.361 Ghz.

43. (New) The apparatus of claim 34 wherein said first and second signal paths are alternatively selected, by a frequency hopping/GPS control signal, to provide either said first downconversion signal or said second downconversion signal.

~~44~~. (New) A method, comprising:

a) transmitting a first wireless packet;
b) receiving a GPS signal; and
c) receiving a second wireless packet, said GPS signal received between said first wireless packet transmission and said second wireless packet reception, said first and second wireless packets being members of a frequency hopping wireless network.

45. (New) The method of claim 44 wherein said transmitting a first wireless packet further comprises synthesizing a frequency that corresponds to a wireless channel over which said first wireless packet is to be transmitted.

46. (New) The method of claim 45 wherein said synthesizing further comprises providing a sigma delta modulator with a control word, said control word causing said sigma delta modulator to produce an output

signal having an average value which, when provided to a feedback divider within a phase lock loop, causes said phase lock loop to produce an output signal having said frequency.

47. (New) The method of claim 46 wherein said providing further comprises toggling a frequency hopping/GPS control signal to a frequency hopping state so as to allow said control word to be presented to said sigma delta modulator.

48. (New) The method of claim 44 wherein said receiving a GPS signal further comprises synthesizing a downconversion signal, said downconversion signal having a downconversion frequency.

49. (New) The method of claim 48 wherein said synthesizing further comprises providing a sigma delta modulator with a control word, said control word causing said sigma delta modulator to produce an output signal having an average value which, when provided to a feedback divider within a phase lock loop, causes said phase lock loop to produce an output signal having a frequency of 2.361 Ghz, said phase lock loop output signal divided by 2/3 such that said downconversion frequency is 1.574 GHz.

50. (New) The method of claim 49 wherein said providing further comprises toggling a frequency hopping/GPS control signal to a GPS state so as to allow said control word to be presented to said sigma delta modulator.

51. (New) The method of claim 44 wherein said receiving a second wireless packet further comprises synthesizing a downconversion frequency that corresponds to a wireless channel over which said second wireless packet is to be received.

52. (New) The method of claim 45 wherein said synthesizing further comprises providing a sigma delta modulator with a control word, said control word causing said sigma delta modulator to produce an output signal having an average value which, when provided to a feedback divider within a phase lock loop, causes said phase lock loop to produce an output signal having said downconversion frequency.

53. (New) The method of claim 52 wherein said providing further comprises toggling a frequency hopping/GPS control signal to a frequency hopping state so as to allow said control word to be presented to said sigma delta modulator.

54. (New) A method, comprising:

a) synthesizing a first frequency to transmit a first wireless signal carried within a first wireless channel at a first carrier frequency, said first wireless signal corresponding to a first wireless packet;
b) changing said first frequency to a second frequency to receive a second wireless signal carried at a second carrier frequency, said second wireless signal a GPS signal; and
c) changing said second frequency to a third frequency to receive a third wireless signal carried at a third carrier frequency, said third

wireless signal corresponding to a second wireless packet, said first and second wireless packets members of a frequency hopping wireless network.

55. (New) The method of claim 54 further comprising providing a sigma delta modulator with a control word to synthesize said first frequency.

56. (New) The method of claim 55 wherein said control word causes said sigma delta modulator to produce an output signal having an average value which, when provided to a feedback divider within a phase lock loop, causes said phase lock loop to produce an output signal having a frequency that corresponds to said first frequency.

57. (New) The method of claim 56 wherein said phase lock loop output signal frequency is said third frequency, said third frequency a carrier frequency for said first wireless channel.

58. (New) The method of claim 56 wherein said providing further comprises toggling a frequency hopping/GPS control signal to a frequency hopping state which causes said providing of said control word to said sigma delta modulator.

59. (New) The method of claim 58 further comprising providing a sigma delta modulator with a GPS control word to cause said changing from said first frequency to said second frequency.

60. (New) The method of claim 59 wherein said GPS control word causes said sigma delta modulator to produce an output signal having an average value which, when provided to a feedback divider within a phase lock loop, causes said phase lock loop to produce an output signal having a frequency that corresponds to said second frequency.

61. (New) The method of claim 60 wherein said phase lock loop output signal frequency is 2.361 Ghz, said phase lock loop output signal divided by 2/3 such that said second frequency corresponds to a downconversion frequency of 1.574 GHz.

62. (New) The method of claim 59 wherein said providing further comprises toggling a frequency hopping/GPS control signal to a GPS state so as to cause said providing of said GPS control word to said sigma delta modulator.

63. (New) The method of claim 54 further comprising providing a sigma delta modulator with a control word that replaces a pre-existing GPS control word, said replacement causing said changing from said second frequency to said third frequency.

64. (New) The method of claim 63 wherein said control word causes said sigma delta modulator to produce an output signal having an average value which, when provided to a feedback divider within a phase lock loop, causes said phase lock loop to produce an output signal having a frequency that corresponds to said third frequency.

65. (New) The method of claim 64 wherein said phase lock loop output signal frequency is said third frequency, said third frequency a downconversion frequency for said second wireless channel.

66. (New) The method of claim 63 wherein said providing further comprises toggling a frequency hopping/GPS control signal to a frequency hopping state so as to cause said replacing of said GPS control word with said control word.

67. (New) The method of claim 54 wherein said changing occurs within 10 microseconds.

68. (New) The method of claim 67 wherein said reception of said second wireless signal lasts for 200 microseconds.

69. (New) The method of claim 54 wherein said frequency hopping wireless network corresponds to a BLUETOOTH network.

70. (New) The method of claim 54 wherein said frequency hopping wireless network corresponds to an IEEE 802.11 wireless network.

71. (New) The method of claim 54 wherein said frequency hopping wireless network corresponds to a HomeRF wireless network.

72. (New) An apparatus, comprising:

an integrated frequency hopping/GPS wireless receiver, said integrated frequency hopping/GPS wireless receiver having a first signal processing path that processes a GPS signal and a second signal processing path that processes a wireless channel signal, said wireless channel within a frequency hopping wireless network, said first signal processing path having a lower noise figure than said second signal processing path, said integrated frequency hopping/GPS wireless receiver having a frequency hopping/GPS control signal that alternatively selects either said first signal processing path or said second signal processing path.

73. (New) The apparatus of claim 72 wherein said first signal processing path further comprises an off chip amplifier and said second signal processing path does not comprise an off chip amplifier.

74. (New) The apparatus of claim 73 wherein said off chip amplifier has a lower noise figure than said on chip amplifier.

75. (New) An apparatus, comprising:
an integrated frequency hopping/GPS wireless receiver, said integrated frequency hopping/GPS wireless receiver having a first signal processing path that processes a GPS signal and a second signal processing path that processes a wireless channel signal, said wireless channel within a frequency hopping wireless network, said first and second signal processing paths flowing through a common downconverter, said integrated frequency hopping/GPS wireless receiver having a frequency hopping/GPS control signal that alternatively selects either said first signal processing path or said second signal processing path.

76. (New) An apparatus, comprising:

an integrated frequency hopping/GPS wireless receiver, said integrated frequency hopping/GPS wireless receiver having a first signal processing path that processes a GPS signal and a second signal processing path that processes a wireless channel signal, said wireless channel within a frequency hopping wireless network, said first and second signal processing paths flowing through a common Intermediate Frequency (IF) filter, said integrated frequency hopping/GPS wireless receiver having a frequency hopping/GPS control signal that alternatively selects either said first signal processing path or said second signal processing path.

77. (New) The apparatus of claim 76 wherein said common IF filter has a first bandwidth if said first signal processing path is selected and a second bandwidth if said second signal processing path is selected.

78. (New) The apparatus of claim 77 wherein said first bandwidth is 2.00 MHz.

79. (New) The apparatus of claim 77 wherein said second bandwidth is 1.25 MHz.

80. (New) The apparatus of claim 77 wherein said common IF filter further comprises a varactor, said varactor having a capacitance that helps determine whether said IF filter has said first bandwidth or said second bandwidth, said varactor coupled to said frequency hopping/GPS control signal.

81. (New) The apparatus of claim 77 wherein said common IF filter further comprises a gmC filter, said gmC filter having a current that helps determine whether said IF filter has said first bandwidth or said second bandwidth, said current determined by the value of said frequency hopping/GPS control signal.

82. (New) The apparatus of claim 76 further comprising said first signal processing path flowing through a first amplifier and said second signal processing path flowing through a second amplifier, said first amplifier a variable gain amplifier, said second amplifier a limiting amplifier, each of said amplifiers coupled to an output of said common IF filter.

83. (New) The apparatus of claim 82 wherein said first and second amplifiers are a embodied in a common amplifier, said variable gain amplifier converted into said limiting amplifier if said frequency hopping/GPS control signal changes from a GPS state to a frequency hopping state.

84. (New) The apparatus of claim 83 wherein said conversion is implemented by increasing a variable gain input of said amplifier to a level where clipping occurs.

85. (New) The apparatus of claim 76 further comprising said first signal processing path having a lower noise figure that said second signal processing path.

86. (New) The apparatus of claim 76 further comprising said first and second signal processing paths flowing through a common downconverter prior to said common IF filter.

87. (New) The apparatus of claim 76 further comprising said first and second signal processing paths flowing through a common A/D converter beyond said IF filter.

88. (New) The apparatus of claim 76 further comprising said first signal processing path having a lower noise figure that said second signal processing path, said first and second signal processing paths flowing through a common downconverter prior to said common IF filter, said first and second signal processing paths flowing through a common A/D converter beyond said IF filter.

89. (New) An apparatus, comprising:

an integrated frequency hopping/GPS wireless receiver, said integrated frequency hopping/GPS wireless receiver having a first signal processing path that processes a GPS signal and a second signal processing path that processes a wireless channel signal, said wireless channel within a frequency hopping wireless network, said first and second signal processing paths flowing through a common A/D converter, said integrated frequency hopping/GPS wireless receiver having a frequency hopping/GPS control signal that alternatively selects either said first signal processing path or said second signal processing path.

90. (New) The apparatus of claim 89 wherein said second signal processing path further comprises a frequency shift keyed demodulator prior to said common A/D converter.

91. (New) The apparatus of claim 89 wherein said first signal processing path further comprises an IQ combiner prior to said common A/D converter.

92. (New) The apparatus of claim 89 further comprising a signal processing path select unit before said common A/D converter, said signal processing path select unit having an output coupled to an input of said common A/D converter, said signal processing path select unit having a signal processing path select input coupled to said frequency hopping/GPS control signal, said first signal processing path flowing through a first input of said signal processing path select unit, said second signal processing path flowing through a second input of said signal processing path select unit.

93. (New) The apparatus of claim 89 wherein said A/D converter provides more than 2^2 resolution levels for said first and second signal processing paths.

94. (New) The apparatus of claim 89 wherein said A/D converter provides 2^6 resolution levels for said first and second signal processing paths.

95. (New) An article of manufacture that describes a circuit design for a semiconductor chip, said circuit design comprising:

a) a phase lock loop that provides an output signal that changes from having a first frequency in order to receive a GPS baseband signal to having a second frequency in order to receive or transmit a wireless channel baseband signal, wherein said GPS baseband signal is carried in a first modulated format by a first carrier signal, wherein said wireless channel baseband signal is carried in a second modulated format by a second carrier signal, said second carrier signal having a frequency within a frequency range that spans from 2.400 GHz to 2.480GHz, the difference between said first and second frequencies less than the difference between said second carrier signal frequency and 1.575 GHz, said phase lock output signal provided at an output of said phase lock loop;

b) a first signal path that flows from said phase lock loop output, wherein said first signal path propagates a first downconversion signal in order to receive said GPS baseband signal; and

c) a second signal path that flows from said phase lock loop output, wherein said second signal path propagates a second downconversion signal in order to receive said wireless channel baseband signal.

96. (New) The article of manufacture of claim 95 wherein said description of said circuit design is embodied as a behavioral level description, said behavioral level description stored upon a machine readable medium.

97. (New) The article of manufacture of claim 96 wherein said behavioral level description is within a VHDL format.

98. (New) The article of manufacture of claim 97 wherein said behavioral level description is within a Verilog format.

99. (New) The article of manufacture of claim 96 wherein said machine readable medium is within a CD-ROM.

100.(New) The article of manufacture of claim 96 wherein said machine readable medium is a magnetic recording medium.

101.(New) The article of manufacture of claim 95 wherein said description of said circuit design is embodied as a transistor level netlist, said transistor level netlist stored upon a machine readable medium.

102.(New) The article of manufacture of claim 101 wherein said machine readable medium is a CD-ROM.

103. (New) The article of manufacture of claim 101 wherein said machine readable medium is a magnetic recording medium.

<u>Comments</u>

New claims 10 through 103 have been added in the present preliminary amendment. It is important to point out that new claims 10 through 103 should not be viewed, in any way, as a narrowing amendment to existing claims 1 through 9. To first order, claims 1 through 9 stand unamended and Applicants are unaware of any prior art that would warrant any amendment(s). As such, Applicants are making no sacrifice to the public through the present preliminary